

Message

From: Gary Wealthall [GWealthall@Geosyntec.com]
Sent: 12/1/2021 4:33:33 PM
To: Ohl, Matthew [ohl.matthew@epa.gov]
CC: Norman Bernstein [nwbernstein@nwblc.com]; Peter M. Racher Esq. [pracher@psrb.com]; Krueger, Thomas [krueger.thomas@epa.gov]; Julie Konzuk [JKonzuk@Geosyntec.com]; Andrew A Gremos [agremos@ramboll.com]; kneighbo [kneighbo@idem.IN.gov]
Subject: RE: Follow-up Request for ERH at Third Site DNAPL Area
Flag: Follow up

Matt

Thank you for your message.

The recommendation for a conference call was to bring together our collective experience to develop a path forward. Previous conference calls have been very productive and, in this instance, would benefit from the blend of skills provided by the EPA/US Army Corps, Geosyntec (global experts in bioremediation) and TRS (leading US experts in thermal remediation). We would be pleased to arrange a conference call at a mutually convenient time.

We look forward to hearing from you.

Best regards
Gary

Dr Gary Wealthall, FGS
Senior Principal
Geosyntec Consultants Ltd

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From: Ohl, Matthew <ohl.matthew@epa.gov>
Sent: 23 November 2021 16:06
To: Gary Wealthall <GWealthall@Geosyntec.com>
Cc: Norman Bernstein <nwbernstein@nwblc.com>; Peter M. Racher Esq. <pracher@psrb.com>; Krueger, Thomas <krueger.thomas@epa.gov>; Julie Konzuk <JKonzuk@Geosyntec.com>; Andrew A Gremos <agremos@ramboll.com>; kneighbo <kneighbo@idem.IN.gov>
Subject: RE: Follow-up Request for ERH at Third Site DNAPL Area

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Gary,
We have been reviewing the issues you raised and will respond soon.
Thank you,
Matt

Matthew J. Ohl
Remedial Project Manager

United States Environmental Protection Agency
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From: Gary Wealthall <GWealthall@Geosyntec.com>
Sent: Tuesday, November 23, 2021 9:43 AM
To: Ohl, Matthew <ohl.matthew@epa.gov>
Cc: Norman Bernstein <nwbernstein@nwblc.com>; Peter M. Racher Esq. <pracher@psrb.com>; Krueger, Thomas <krueger.thomas@epa.gov>; DPetroff <DPetroff@idem.IN.gov>; Julie Konzuk <JKonzuk@Geosyntec.com>; Andrew A Gremos <agremos@ramboll.com>
Subject: RE: Follow-up Request for ERH at Third Site DNAPL Area

Dear Matt

Further to our email of November 12, we respectfully request a conference call to discuss the approach for the Third Site DNAPL Area proposed by the EPA and the Army Corps and IDEM personal. Please could you confirm if there are there any days during the week following Thanksgiving that would work for conference call?

Best regards
Gary

Dr Gary Wealthall, FGS
Senior Principal
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From: Gary Wealthall
Sent: 12 November 2021 16:11
To: 'ohl.matthew@epa.gov' <ohl.matthew@epa.gov>
Cc: Norman Bernstein <nwbernstein@nwblc.com>; Peter M. Racher Esq. <pracher@psrb.com>; 'krueger.thomas@epa.gov' <krueger.thomas@epa.gov>; Douglas Petroff (<DPetroff@idem.IN.gov>) <DPetroff@idem.IN.gov>; Julie Konzuk <JKonzuk@Geosyntec.com>; Andrew A Gremos <agremos@ramboll.com>
Subject: FW: Follow-up Request for ERH at Third Site DNAPL Area

Dear Matt

Thank you for your email dated November 3, 2021.

We respectfully disagree with EPA's approach and request a conference call with EPA and the Army Corps and IDEM personal that have come up with the approach that EPA has requested.

Our main concerns are outlined (*italicized text*) in the body of your email, below.

Sincerely
Gary Wealthall

Dr Gary Wealhall, FGS
Senior Principal
Geosyntec Consultants Ltd

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----- Forwarded message -----

From: **Ohl, Matthew** <ohl.matthew@epa.gov>
Date: Wed, Nov 3, 2021 at 9:46 AM
Subject: Follow-up Request for ERH at Third Site DNAPL Area
To: Julie Konzuk <JKonzuk@geosyntec.com>, Andrew A Gremos <agremos@ramboll.com>, Esq. Norm Bernstein <nwbernstein@nwbllc.com>, Peter Racher <pracher@psrb.com>
Cc: Krueger, Thomas <krueger.thomas@epa.gov>, DPetroff <DPetroff@idem.in.gov>

Good morning all,

Thank you for the additional information on bioremediation and the discussions we have had of site-specific conditions and the proposals the Trustees are considering. After consulting with the U.S. Army Corps of Engineers and IDEM, EPA believes further ERH treatment is the most likely approach to quickly and effectively achieve the cleanup standards. We continue to recommend and request additional ERH treatment for the DNAPL area as provided by the Amended Enforcement Action Memorandum of December 12, 2016. It appears that in locations that were fully and successfully heated, effective treatment was achieved. EPA suggests adding treatment points with an emphasis on addressing the remaining contaminated areas.

While ERH may result in a shorter timeframe to achieve remedial targets, there remains the potential to exacerbate further downward migration of NAPL. The timeframe for ambient temperature bioremediation achieves the same results as ERH, but over a longer timeframe at much lower cost and with less risk. Ambient temperature bioremediation should pose no risk of further migration of NAPL, the risk of VOC migration in groundwater would be low, and controllable due to the low groundwater flow velocities. Additionally, to the extent that EPA is concerned that there may be contaminated groundwater flowing under the sheet-pile wall, that can be addressed by first sampling to the south and west of the PSGS-11 area, which is the only area where any DNAPL has been found. EPA has previously requested that that sampling be done, and we are prepared to undertake it as soon as reasonably practical, weather permitting.

Treating these areas using thermal remediation will likely entail completely delineating the depth of this contamination, and installing additional electrodes and extraction wells fully enveloping the defined treatment area.

It is anticipated that complete delineation (using Sonic drilling methods to recover soil and groundwater samples and install small diameter wells) will be required to depths greater than 55 feet, to treat the contamination using ambient temperature bioremediation. The small diameter wells can be used to extract DNAPL, water and

vapor. If effective, that extraction may obviate the need for either ambient bioremediation or ERH in the PSGS-11 area.

A preliminary estimate is that an additional 20 electrodes and seven extraction wells installed to approximately 55 feet below ground surface (BGS) would be adequate to address the additional sub-40-foot BGS contamination observed in post-remediation sampling. It is noted that the existing aboveground equipment is more than adequately sized to handle the additional loads imposed by the likely treatment volume increase, and thus this equipment could be reused. However, given the time that the equipment has been left on-site, we expect four to six weeks of repair time will be needed before operation.

This comment that 20 electrodes and seven extraction wells (preliminarily estimated to cost in vicinity of \$3 million) does not correctly reflect the current compliance status of the DNAPL area and is also inconsistent with EPA's recognition of the difficulties of complete remediation of DNAPL, particularly at depth. As to compliance, P-2, P-3 and the Sump have already achieved the required 90% reduction in total VOC concentrations. The only remaining compliance point that did not achieve the 90% required reduction in total VOCs is P-1. The most recent data shows rapid natural attenuation at that location. The remaining compliance obligation, which is separate from the 90% reduction of total VOCs, is to break down the DNAPL concentrations in the vicinity of PSGS-11 to less than DNAPL concentrations (at aqueous effective solubility). Based on its extensive experience with ambient bioremediation, Geosyntec continues to recommend the use of that technology to break down the remaining DNAPL if the use of small diameter well extraction does not solve the problem. However, even if ERH were to be used for that purpose in the PSGS-11 area, nothing like 20 electrodes and seven extraction wells would be needed.

Please provide a work plan for additional ERH treatment by December 1, 2021.

Sincerely,

Matt

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